

Release notes for ENDF/B Development n-094_Pu_237
evaluation



April 26, 2017

- fudge-4.0 Warnings:

1. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.31%

2. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 3 (total): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 3 (total): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 (n + Pu237): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 (n + Pu237): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission]): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission]): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 9 ($n + (Pu237_e1 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (5.034466e-10) is too small

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 10 ($n + (Pu237_e2 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (8.743210e-09) is too small

11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 11 ($n + (Pu237_e3 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.159012e-09) is too small

12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 12 ($n + (Pu237_e4 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (6.722622e-09) is too small

13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 13 ($n + (Pu237_e5 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (5.456068e-09) is too small

14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 14 ($n + (Pu237_e6 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (8.864768e-09) is too small

15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 15 ($n + (Pu237_e7 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.858593e-09) is too small

16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 16 ($n + (Pu237_e8 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.317279e-09) is too small

17. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 17 ($n + (Pu237_e9 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (4.383713e-10) is too small

18. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 18 ($n + (Pu237_e10 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.660602e-10) is too small

19. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 19 ($n + (Pu237_e11 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.986509e-09) is too small

20. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 21 ($n + (Pu237_e13 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.532093e-10) is too small

21. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 22 ($n + (Pu237_e14 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.427021e-09) is too small

22. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 23 ($n + (Pu237_e15 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (6.569915e-10) is too small

23. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 24 ($n + (Pu237_e16 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.784105e-10) is too small

24. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 25 ($n + (Pu237_e17 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.320852e-09) is too small

25. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 26 ($n + (Pu237_e18 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (3.249860e-10) is too small

26. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 27 ($n + (Pu237_e19 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.304388e-10) is too small

27. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 28 ($n + (Pu237_e20 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.359277e-09) is too small

28. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 29 ($n + (Pu237_e21 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (5.328077e-10) is too small

29. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 30 ($n + (Pu237_e22 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.132945e-10) is too small

30. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 31 ($n + (Pu237_e23 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.298898e-09) is too small

31. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 32 ($n + (Pu237_e24 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (9.176503e-10) is too small

32. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 33 ($n + (Pu237_e25 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.023156e-09) is too small

33. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 34 ($n + (Pu237_e26 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (3.076030e-09) is too small

34. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 35 ($n + (Pu237_e27 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (5.632191e-10) is too small

35. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 36 ($n + (Pu237_e28 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (6.036955e-09) is too small

36. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 37 ($n + (Pu237_e29 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.016624e-10) is too small

37. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 38 ($n + (Pu237_e30 \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (4.418554e-10) is too small

38. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 39 ($n + (Pu237_c \rightarrow Pu237 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

39. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 40 ($Pu238 + \gamma$): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

40. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 40 ($Pu238 + \gamma$): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

41. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 41 (n + Pu237 [angular distribution]): / Form 'eval': (Error # 1): Condition num.
- ```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```
42. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 42 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.*
- ```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```
43. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 43 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.
- ```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```
44. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 44 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.*

- ```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```
45. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 45 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

- ```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```
- fudge-4.0 Errors:
    1. Duplicate Eout in outgoing distribution  
*Reading ENDF file: ../n-094\_Pu\_237.endf (Error # 0): Bad Eout*

```
WARNING: skipping duplicate e_out = 6999890.0, ii = 145 6 10.0
WARNING: skipping duplicate e_out = 6999900.0, ii = 145 7 20.0
WARNING: skipping duplicate e_out = 6999910.0, ii = 145 8 30.0
WARNING: skipping duplicate e_out = 6999930.0, ii = 145 9 50.0
... plus 2 more instances of this message
```

2. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_a / Multiplicity: (Error # 0): Domain mismatch (a)*

```
WARNING: Domain doesn't match the cross section domain: (258094.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
```

3. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Distribution: / uncorrelated - angular - isotropic: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (258094.0 -> 20000000.0) vs (104106.0 -> 20000000.0)  
 WARNING: Domain doesn't match the cross section domain: (440276.0 -> 20000000.0) vs (104106.0 -> 20000000.0)  
 WARNING: Domain doesn't match the cross section domain: (305294.0 -> 20000000.0) vs (104106.0 -> 20000000.0)  
 WARNING: Domain doesn't match the cross section domain: (156112.0 -> 20000000.0) vs (104106.0 -> 20000000.0)  
 ... plus 46 more instances of this message
4. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_b / Multiplicity: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (440276.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
5. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_c / Multiplicity: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (305294.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
6. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_d / Multiplicity: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (156112.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
7. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_e / Multiplicity: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (305294.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
8. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_f / Multiplicity: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (225204.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
9. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_g / Multiplicity: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (371976.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
10. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_h / Multiplicity: (Error \# 0): Domain mismatch (a)$ 

WARNING: Domain doesn't match the cross section domain: (281412.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
11. Energy range of data set does not match cross section range  
 $reaction\ label\ 31: n + (Pu237_c \rightarrow Pu237 + gamma) / Product: Pu237_c / Decay\ product: gamma\_i / Multiplicity: (Error \# 0): Domain mismatch (a)$

- WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
12. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_j / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (371976.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
13. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_k / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
14. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_l / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
15. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_m / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
16. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_n / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (250000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
17. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_o / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (547319.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
18. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_p / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
19. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_q / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
20. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_r / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (584476.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

21. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_s / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

22. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_t / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

23. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_u / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (475515.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

24. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_v / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (475515.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

25. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_w / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (584476.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

26. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_x / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

27. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_y / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (584476.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

28. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_z / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

29. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_aa / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (405910.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

30. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ab / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (440276.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

31. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ac / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

32. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ad / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (440276.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

33. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ae / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (475515.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

34. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_af / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (693940.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

35. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ag / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (547319.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

36. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ah / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (657787.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

37. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ai / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (515183.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

38. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_aj / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (584476.0 -> 20000000.0) vs (104106.0 -> 20000000.0)

39. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ak / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (699162.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

40. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_al / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (593515.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

41. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_am / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (547319.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

42. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_an / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (584476.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

43. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ao / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (657787.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

44. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ap / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (584476.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

45. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_aq / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (900000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

46. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ar / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (900000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

47. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_as / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING: Domain doesn't match the cross section domain: (900000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)**

48. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_at / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (800000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
49. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_au / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (760221.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
50. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_av / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (760221.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
51. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_aw / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (800000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
52. Energy range of data set does not match cross section range  
*reaction label 31: n + (Pu237\_c ->Pu237 + gamma) / Product: Pu237\_c / Decay product: gamma\_ax / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (800000.0 -> 20000000.0) vs (104106.0 -> 20000000.0)
53. Calculated and tabulated Q values disagree.  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: -5927750.391113281 eV vs -5880730. eV!
54. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_a / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
55. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
56. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_b / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)

57. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
58. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_c / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
59. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
60. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_d / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
61. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
62. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_e / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
63. Energy range of data set does not match cross section range  
*reaction label 32: n[multiplicity:'2'] + Pu236 + gamma / Product: gamma\_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (5905750.0 -> 20000000.0)
64. Calculated and tabulated Q values disagree.  
*reaction label 33: n[multiplicity:'3'] + Pu235 + gamma (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: -13280034.52474976 eV vs -1.3233e7 eV!
65. Calculated and tabulated Q values disagree.  
*reaction label 35: Pu238 + gamma (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 6952857.519836426 eV vs 6999880. eV!
66. Multiplicity does not match sum of linked product multiplicities!  
*multiplicitySum label 33: n + (Pu237\_c ->Pu237 + gamma) total gamma multiplicity (Error # 0): summedMultiplicityMismatch*

```
WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 20.68%
```

67. Multiplicity does not match sum of linked product multiplicities!  
*multiplicitySum label 34: n[multiplicity:'2'] + Pu236 + gamma total gamma multiplicity*  
*(Error # 0): summedMultiplicityMismatch*

```
WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 99.99%
```

68. Calculated and tabulated Q values disagree.  
*fissionComponent label 0: /reactionSuite/fissionComponents/fissionComponent[@label='0']*  
*(Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: 221748700786.8705 eV vs 2.013639e8 eV!
```

69. Calculated and tabulated Q values disagree.  
*fissionComponent label 1: /reactionSuite/fissionComponents/fissionComponent[@label='1']*  
*(Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: 221748700786.8705 eV vs 2.013639e8 eV!
```

70. Calculated and tabulated Q values disagree.  
*fissionComponent label 2: /reactionSuite/fissionComponents/fissionComponent[@label='2']*  
*(Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: 221748700786.8705 eV vs 2.013639e8 eV!
```

71. Calculated and tabulated Q values disagree.  
*fissionComponent label 3: /reactionSuite/fissionComponents/fissionComponent[@label='3']*  
*(Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: 221748700786.8705 eV vs 2.013639e8 eV!
```

72. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.  
*Section 41 (n + Pu237 [angular distribution]): / Form 'eval': / LegendreLValue L=1 vs 1*  
*(Error # 0): Bad evs*

```
WARNING: 10 negative eigenvalues! Worst case = -2.156205e-05
```

- njoy2012 Warnings:

- Evaluation has no resonance parameters given  
*unresr...calculation of unresolved resonance cross sections (0): No RR*

```
---message from unresr---mat 9431 has no resonance parameters
copy as is to nout
```

- In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.  
*heatr...prompt kerma (0): HEATR/hinit (3)*

```
---message from hinit---mt19 has no spectrum
mt18 spectrum will be used.
```

3. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (1): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 16 does not give recoil za= 94236
one-particle recoil approx. used.
```

4. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (2): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 17 does not give recoil za= 94235
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (3): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 51 does not give recoil za= 94237
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (4): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 52 does not give recoil za= 94237
one-particle recoil approx. used.
```

7. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (5): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 53 does not give recoil za= 94237
one-particle recoil approx. used.
```

8. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (6): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 54 does not give recoil za= 94237
one-particle recoil approx. used.
```

9. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (7): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 55 does not give recoil za= 94237
one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (8): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 56 does not give recoil za= 94237
one-particle recoil approx. used.
```

11. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (9): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 57 does not give recoil za= 94237
one-particle recoil approx. used.
```

12. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (10): HEATR/hinit (4)*

---message from hinit---mf6, mt 58 does not give recoil za= 94237  
one-particle recoil approx. used.

13. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (11): HEATR/hinit (4)*

---message from hinit---mf6, mt 59 does not give recoil za= 94237  
one-particle recoil approx. used.

14. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (12): HEATR/hinit (4)*

---message from hinit---mf6, mt 60 does not give recoil za= 94237  
one-particle recoil approx. used.

15. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (13): HEATR/hinit (4)*

---message from hinit---mf6, mt 61 does not give recoil za= 94237  
one-particle recoil approx. used.

16. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (14): HEATR/hinit (4)*

---message from hinit---mf6, mt 62 does not give recoil za= 94237  
one-particle recoil approx. used.

17. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (15): HEATR/hinit (4)*

---message from hinit---mf6, mt 63 does not give recoil za= 94237  
one-particle recoil approx. used.

18. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (16): HEATR/hinit (4)*

---message from hinit---mf6, mt 64 does not give recoil za= 94237  
one-particle recoil approx. used.

19. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (17): HEATR/hinit (4)*

---message from hinit---mf6, mt 65 does not give recoil za= 94237  
one-particle recoil approx. used.

20. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (18): HEATR/hinit (4)*

---message from hinit---mf6, mt 66 does not give recoil za= 94237  
one-particle recoil approx. used.

21. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (19): HEATR/hinit (4)*

---message from hinit---mf6, mt 67 does not give recoil za= 94237  
one-particle recoil approx. used.

22. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (20): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 68 does not give recoil za= 94237
one-particle recoil approx. used.
```

23. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (21): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 69 does not give recoil za= 94237
one-particle recoil approx. used.
```

24. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (22): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 70 does not give recoil za= 94237
one-particle recoil approx. used.
```

25. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (23): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 71 does not give recoil za= 94237
one-particle recoil approx. used.
```

26. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (24): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 72 does not give recoil za= 94237
one-particle recoil approx. used.
```

27. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (25): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 73 does not give recoil za= 94237
one-particle recoil approx. used.
```

28. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (26): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 74 does not give recoil za= 94237
one-particle recoil approx. used.
```

29. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (27): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 75 does not give recoil za= 94237
one-particle recoil approx. used.
```

30. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (28): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 76 does not give recoil za= 94237
one-particle recoil approx. used.
```

31. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (29): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 77 does not give recoil za= 94237
one-particle recoil approx. used.
```

32. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (30): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 78 does not give recoil za= 94237
one-particle recoil approx. used.
```

33. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (31): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 79 does not give recoil za= 94237
one-particle recoil approx. used.
```

34. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (32): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 80 does not give recoil za= 94237
one-particle recoil approx. used.
```

35. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (33): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 91 does not give recoil za= 94237
one-particle recoil approx. used.
```

36. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (34): HEATR/hinit (4)*

```
---message from hinit---mf6, mt102 does not give recoil za= 94238
photon momentum recoil used.
```

37. There is a problem with the fission energy release.  
*heatr...prompt kerma (43): HEATR/nheat (3)*

```
---message from nheat---changed q from 2.013639E+08 to 1.908640E+08
for mt 18
```

38. Evaluation has no resonance parameters given  
*purr...probabalistic unresolved calculation (0): No RR*

```
---message from purr---mat 9431 has no resonance parameters
copy as is to nout
```

- **xsectplotter Errors:**

1. Duplicate Eout in outgoing distribution  
*(Error # 2): Bad Eout*

```
WARNING: skipping duplicate e_out = 6999890.0, i1 = 145 6 10.0
WARNING: skipping duplicate e_out = 6999900.0, i1 = 145 7 20.0
WARNING: skipping duplicate e_out = 6999910.0, i1 = 145 8 30.0
WARNING: skipping duplicate e_out = 6999930.0, i1 = 145 9 50.0
... plus 2 more instances of this message
```